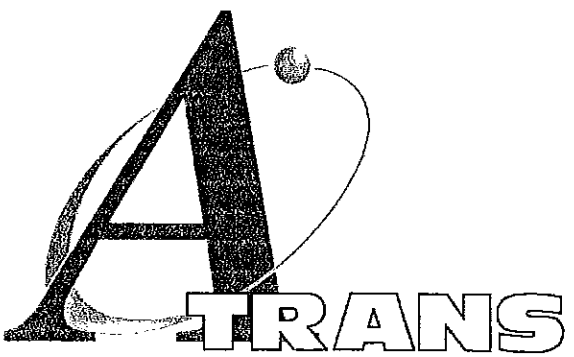
Traverse Mountain
Internal Traffic Analysis
Traffic Impact Study

Lehi, UT

September 2011

TRAFFIC STUDY



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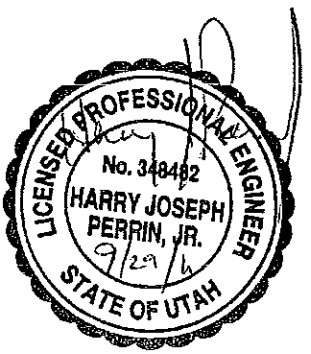
September 2011 Update



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Purpose of Report and Study Objectives

The following is an update to the April 2008 Traverse Mountain Traffic Study. This traffic study is to analyze the internal roadway system only and to determine the size of internal roadways and intersections to achieve a Level of Service (LOS) C or better throughout Traverse Mountain. The main changes to the previous study are the location and density of residential and commercial land use. Infrastructure assumptions assume no northern I-15 interchange will be built and therefore, there will be no other connection to Digital Drive will occur. This is primarily because in the April 2008 report, it was identified that a northern connection would be needed if more than 1,600 units were developed in Sage and Fox Canyon. This revised land use plan has reduced the overall Traverse Mountain units by 27% and less than 1,500 units are planned in Central and Western Canyons. Therefore, additional connections are not needed.

Executive Summary

Site Location and Study Area

Traverse Mountain is located north of SR 92 from I-15 to Micron, a distance of almost 1.5 miles of frontage. The area is developing as a Master Planned Community that will include residential, commercial and office space. Traverse Mountain is located on more than 2,770 acres.

Development Description

Traverse Mountain was originally planned as a 7,982 residential unit community, that number has been reduced to 5,812 units, 1,200 of which already exist with 700 more platted. At build-out, 2,313 units are planned as single family homes and 3,499 are multi-family/condo/town homes. The commercial includes the Lifestyle and Neighborhood Commercial Centers. This includes up to 2.7 million square feet of which 175,000 sf is already in place via Cabelas. Approximately 1,000,000 sf of office space is also planned. The commercial and office are planned along the SR 92 corridor between SR 92 and Traverse Boulevard, which parallels SR 92, approximately 1,200 feet to the north.

Principal Findings

Based on the projected traffic volumes and recommended geometry, all internal intersections are projected to operate at a LOS C or better. The roadway sections require the following lanes to provide sufficient capacity for a LOS C on the roadway segments.

Conclusions / Recommendations

Based on the analysis, the following recommendations should be taken into consideration as the site is developed.

- The internal roads must conform to Lehi City standards and revert to AASHTO and MUTCD where Lehi design standards are not specified.
- Accesses located within 350 feet of the signalized intersections should be limited to right-in / right-out operations.
- For residential locations, a minimum of two accesses should be provided for each pod greater than 50 units. If any reconfiguration occurs that places more than 300 single family homes or 600

townhouse units in a pod, then a third local access is prudent.

- Internal roads are sized for the development as a whole with roads and intersections operating at a LOS C or better.
- Many internal intersections will require future traffic signals as warranted. It is estimated that up to 5 intersections in the residential development will require traffic signals. In addition, mid-block signal will likely be necessary for ingress and egress to the commercial and office developments from the connector roads between SR 92 and Traverse Mountain Blvd, similar to the Cabelas Blvd. signal on Triumph. Depending on where the density is assigned, dual northbound and westbound left turn lanes maybe necessary at the mid-block intersections on Triumph (at Cabelas Blvd) and Morning Glory. This will need to be considered once the commercial to the east develops near full build and Triumph / Cabelas become a four way intersection. ROW preservation for this expansion should occur on the east side of the intersection.
- All internal intersection in the residential zones could provide a similar LOS C or better rating by providing roundabouts instead of traffic signals or stop signs. This is only true for the residential areas. All Commercial intersection will need traffic signals as roundabouts are insufficient. The only exception is

Assumptions

1. SR 92 is being constructed with Quick Lanes to allow the Traverse Mountain Connections to operate at acceptable Levels of Service. The Quick Lanes will provide additional capacity on SR 92 at the Traverse Mountain signalized Intersections.
2. Because Central and West Canyons have less than 1,500 units, no secondary connection to Digital Drive is necessary. If a northern I-15 interchange were constructed, then consideration for a continuation of Traverse Mountain Blvd, could be considered as a convenience.
3. The connection between Chapel Ridge road and Fox Canyon Road, northeast of Traverse Mountain Elementary School, has been eliminated. This redirects the Central Canyon traffic to Fox Canyon Road via Traverse Mountain Blvd.
4. It must be noted that this analysis and subsequent recommendations are based on projected traffic demand as of the August 2011 land use plan which reduces residential development by 27% over past land use plans. As the development occurs, the traffic recommendations should be re-evaluated based on the actual traffic demand experienced on the roadways.
5. It should be noted that the current Traverse Mountain residential traffic is actually generating the ITE Trip Generation Manual Handbook rate in the AM peak for the existing 1,200 units but is only generating 74% of the PM peak rate. Throughout the analysis, the ITE rate is applied to the future residential development but the impact are likely to be less as there are likely much more trip chaining occurring at this time. This may change as services become available closer and therefore the ITE rates are applied throughout the analysis.

Road Designation Changes

Another change from the April 2008 study is that many of the roadway names have changed.

- Frontage Road → Digital Drive
- Cabelas → Adobe Way
- Grand Terrance → Cabelas Blvd

Figure 1 shows the conceptual site plan of the development. Figure 2 shows the intersection and roadway

names and labels used throughout the analysis.

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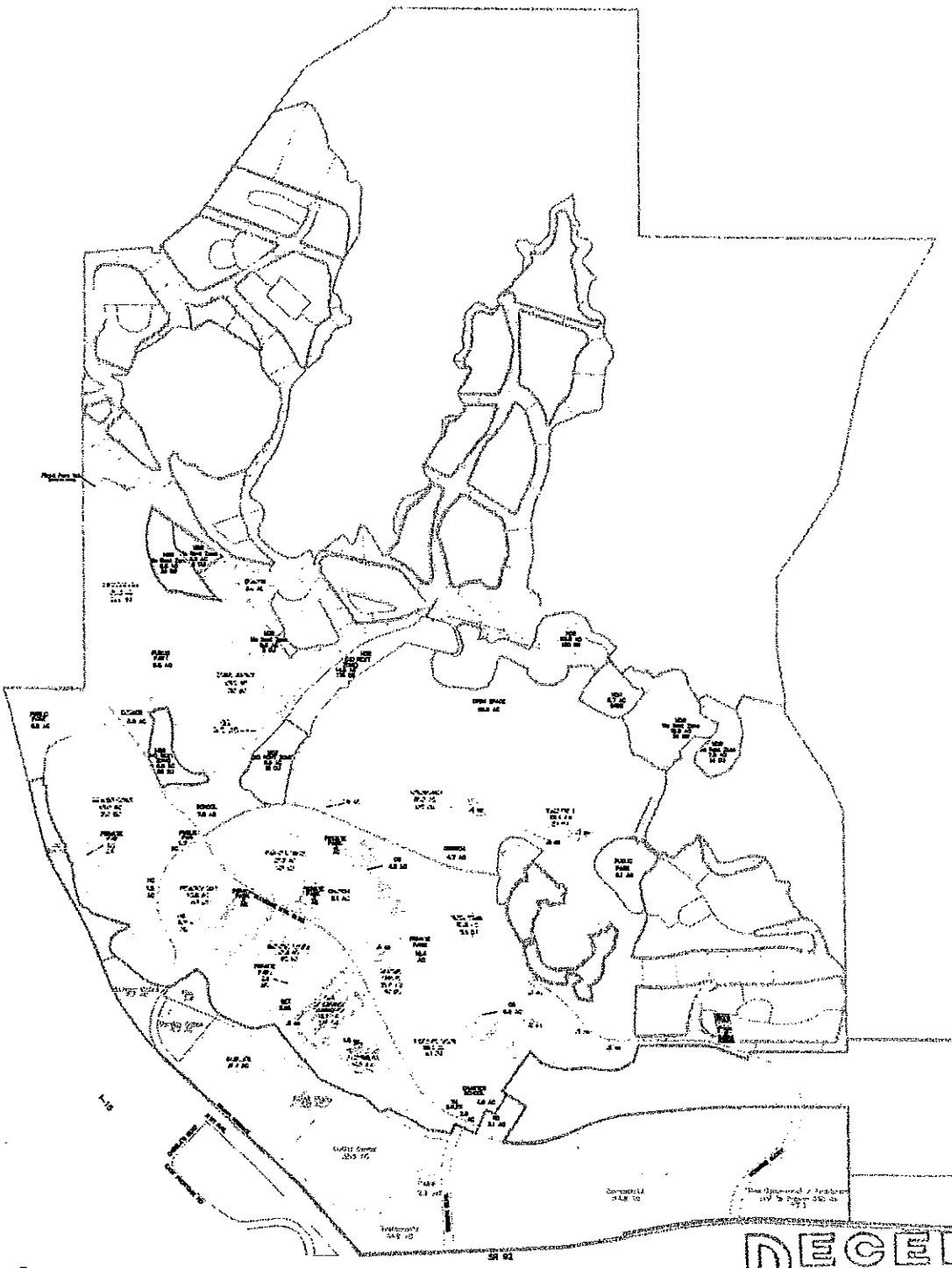

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Figure 1 Conceptual Site Plan

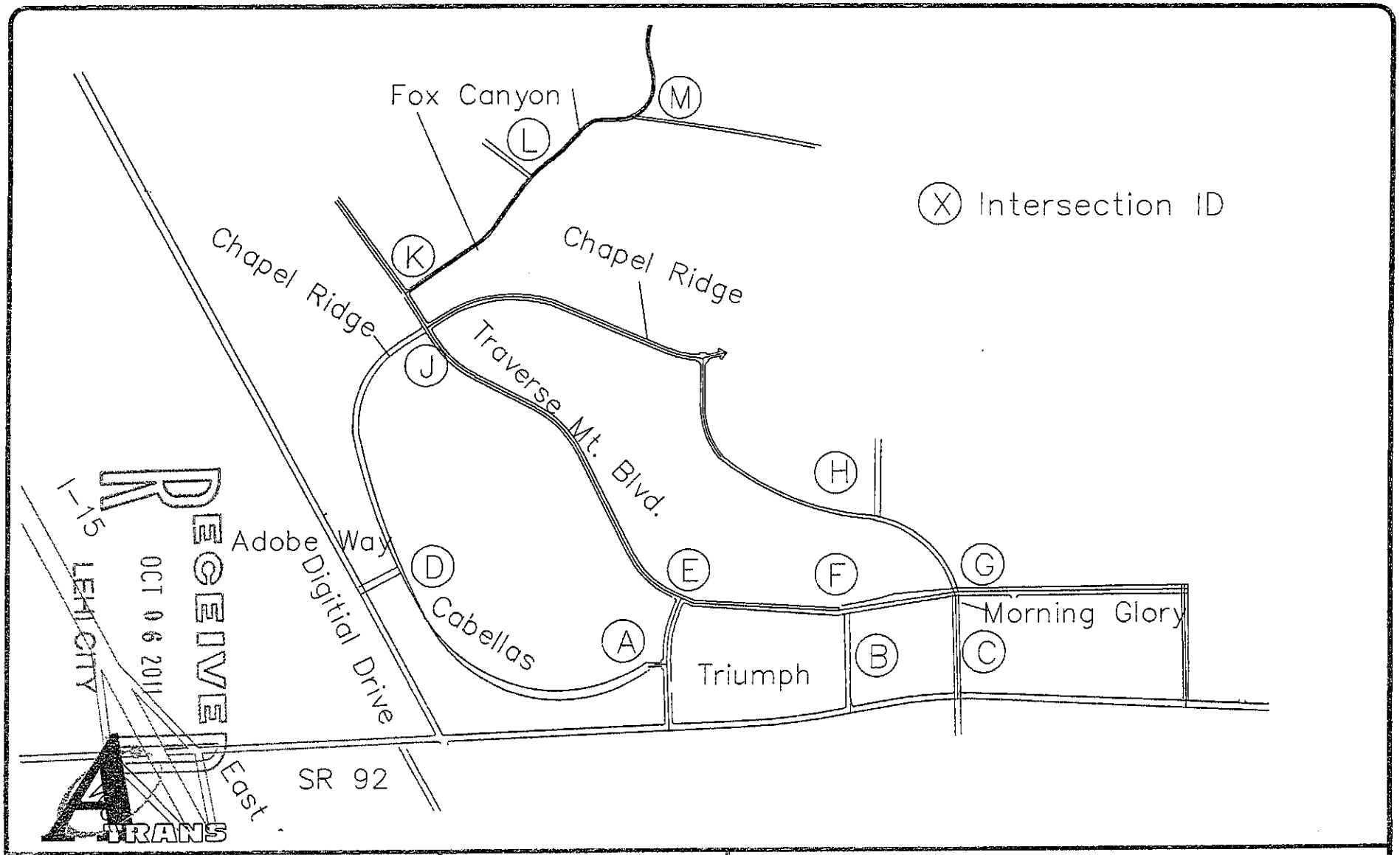

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Figure 2

Road and Intersection Labels

II. Land Use

The trip generation for these land use densities is projected to be 4,286 peak PM trips for the residential developments and 4,254 peak PM trips for the commercial development. The site is projected to generate 96,000 trips a day with a projected 48,000 exiting onto the surrounding roadways at build-out. The land use planned for Traverse Mountain development is shown in Table 1. The residential will develop slower than the Commercial and Office Space which will grow as the economy allows. Therefore, the roadway plans should develop as the areas develop internally but the Main Entrances from SR 92 and the Frontage Road are being reconstructed now with the installation of the SR 92 Quick Lanes and widening project.

Table 1: Planned Land Use

Residential Units Total	1,200	3,506	5,812
Year	**2011**	**2020**	**2030**
Single Family	1,200	1,757	2,313
Multi-Family	0	1,750	3,499
Commercial	200,000	1,350,000	2,700,000
Office	0	500,000	1,000,000

Multi-Family/ town homes/ condos (Units)*	Single family (Units)*	Commercial (SF)	Office (SF)
3,499	2,313	2.7 Million	1 Million

* Includes 5,812 Total Units

III. Existing Traffic Data

Traffic counts were collected at intersections A (Cabelas and Triumph) and D (Cabelas and Adobe) for the AM and PM peak periods. This allowed a trip generation rate for the site to be determined for the 1,200 units currently built.

A. Intersection Counts

Intersection counts were done August 30, 2011 Counts were made from 7 AM to 9 AM and 4 PM to 6 PM for the weekday peak.

B. Roadway Geometry

The developer has requested that the roadways be minimized in order to provide a more residential appealing and pedestrian friendly environment. Therefore, while the site generates 96,000 trips a day with a projected 48,000 exiting onto the surrounding roadways, by providing multiple access points, the traffic flows at any particular point can be accommodated and allow the majority of locations in Traverse Mountain Development in the residential areas to utilize 3-lane roadway facilities as requested. Based on the projected traffic, 3-lane major collectors provide sufficient capacity for the majority of the proposed land uses internal to the site. Through the commercial areas, five-lane roadways are recommended and multiple turn lanes are recommended at key intersections.

The Fox Canyon Road will be a 5-lane cross-section from Traverse Mountain Blvd to the central/West Canyon turn-off where the roadway can be reduced to a 3-lane cross section northeast of that location.

The entrance roadways at all SR 92 intersections should be 5 lanes (2 in each direction and a center median) due to the high traffic volumes between SR 92 and these land uses and also to accommodate multiple left turn ingress and egress lanes. Recommended road geometry is shown in Figure 3.

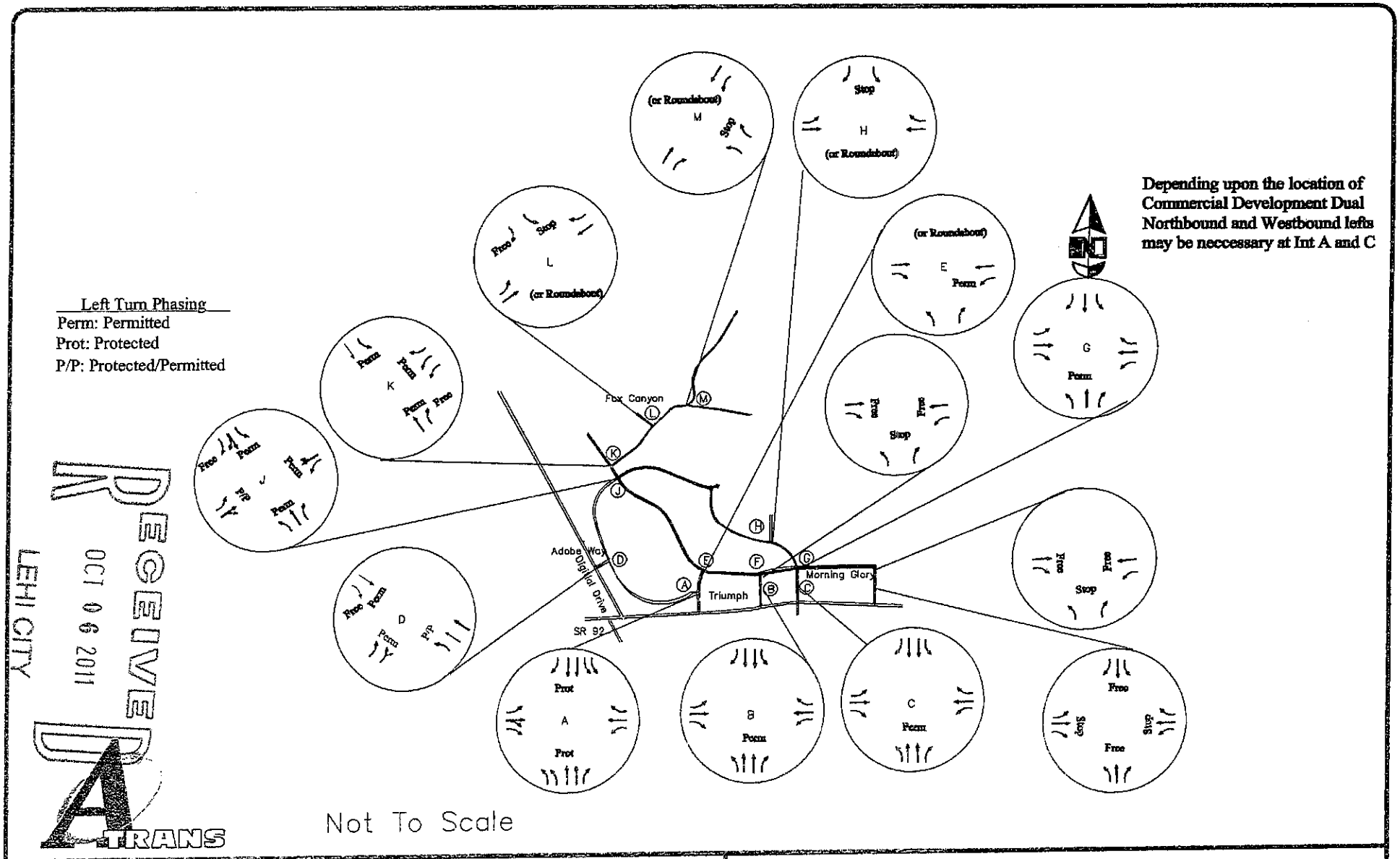

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Figure 3

Recommended Intersection Geometry

IV. Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation (8th Edition) handbook was used to estimate trips for the land uses throughout the Traverse Mountain Development. In addition, to the trip generation, factors such as internal trips are considered. Because this is such a large development, once developed sufficiently, a portion of the traffic generated by the development never exits the site onto SR 92. Internal schools, churches, parks, retail, commercial and even inter-residential trips are estimated to occur within the development. This must be considered if accurate estimates are made about projected traffic demand.

A. Internal Capture Rates

There are two forms of internal capture estimated for the site. Within the residential areas are trip for internal schools, churches, parks, retail, and inter-residential trips which are never projected to access any of the main roads in the development. This would also include walking trips between residences, commercial and office. The other are commercial and office trips which stay within the commercial zones and travel to multiple locations within the commercial area. There are two key assumptions in the trip generation analysis;

1. 20% of the residential traffic never leaves the Traverse Mountain residential area. That is for local neighborhood trips.
2. The commercial area is so large that there is an inherent internal capture rate of traffic traveling from one commercial to another in trip chaining activities. The ITE recommends an internal rate of between 15% and 45% for this level of commercial and office development. A-Trans Engineering has conservatively estimated 20% internal trip capture for the commercial areas.

Trip generation estimates for the AM, PM, and SAT peak hours are comprised of trip generation rates, parcel size, and internal capture. The existing and future location of the development dictates where traffic will travel to access SR 92.

V. Origin/Destination and Trip Distribution

The trip origin/destination (O-D) for the site was estimated from evaluating the existing traffic along SR 92. The assignment of traffic by direction is based on the information provided by the traffic counts and access from the development leading to the following O-D assumptions in Table 2.

Table 2: Origin-Destination Estimates

Location	From/To West (SR 92)	From/To East (SR 92)	From/To South (Morning Glory Rd)
SR 92	70%	10%	20%

Assignment of the traffic to intersections is based on the likely exit point to the development for external traffic and likely internal paths within the development for the internal traffic. Combining the trip generation, origin-destination and assignment (both internal and external) provides traffic estimates throughout the development along roadways and at intersections. Figures 4 through 6 show the 2030 total traffic projections for the AM, PM, and SAT peak periods, respectively. These figures identify the projected traffic with the proposed infrastructure.

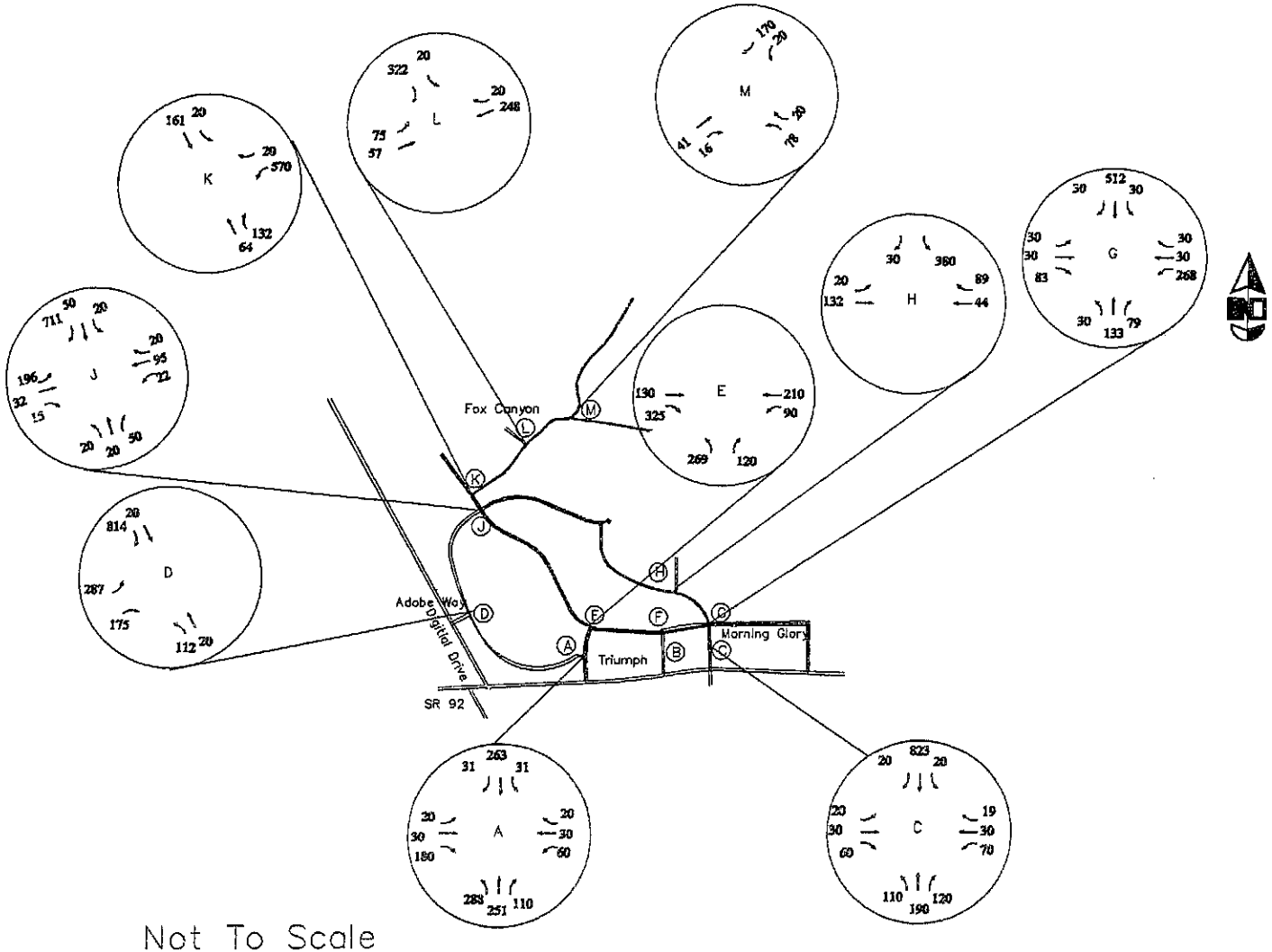

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Figure 4

2030 AM Peak Traffic Volumes

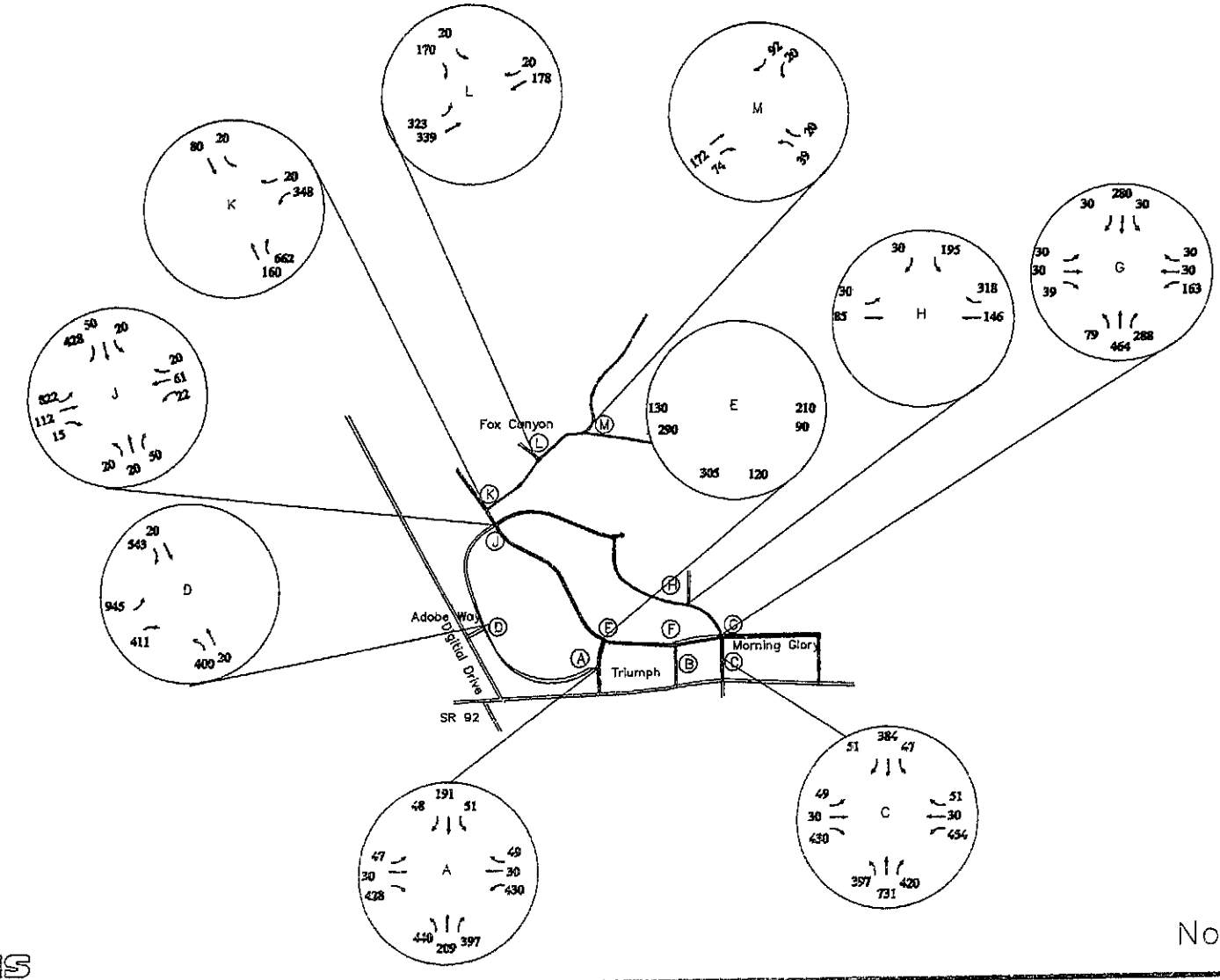

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Figure 5

2030 PM Peak Traffic Volumes

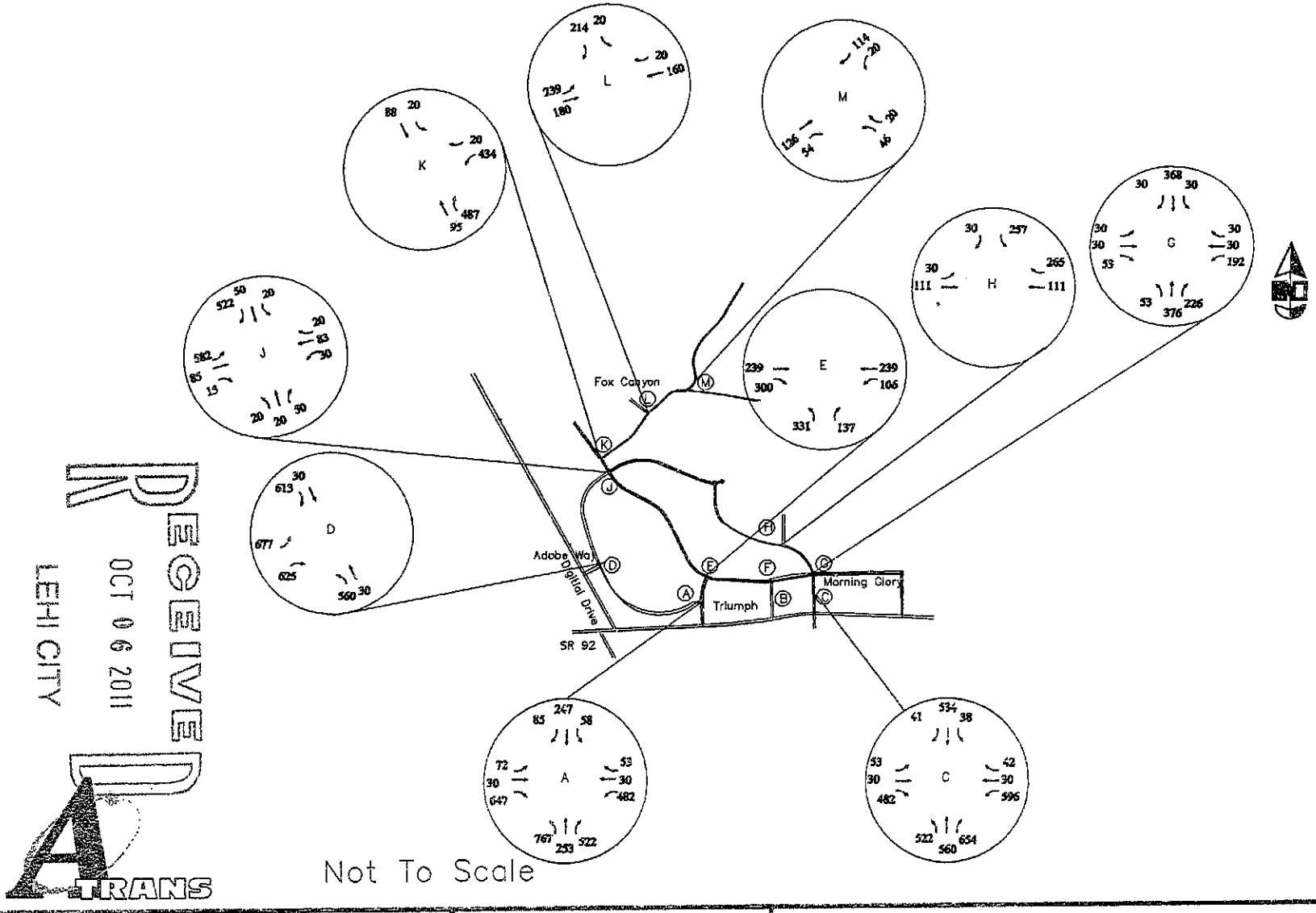

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Figure 6 2030 SAT Peak Traffic Volumes

VI. Traffic Analysis

The traffic analysis is based on the traffic projections shown in Figures 4 through 6. The analysis of each intersection is based on the Highway Capacity Manual methodology. Geometry shown in Figure 3 is assumed.

A. Signalized Intersection Analysis

The 2000 Highway Capacity Manual (HCM) defines the Level of Service (LOS) for signalized intersections as a range of average experienced stopped delay. LOS is a qualitative rating of traveler satisfaction from A to F whereby LOS A is good and LOS F poor. Table 3 shows the LOS range by delay for signalized and unsignalized intersections.

Table 3: Intersection LOS-Delay Relationship

	Unsignalized	Signalized
Level of Service	Total Delay per Vehicle (sec)	Total Delay per Vehicle (sec)
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 15.0	> 10.0 and ≤ 20.0
C	> 15.0 and ≤ 25.0	> 20.0 and ≤ 35.0
D	> 25.0 and ≤ 35.0	> 35.0 and ≤ 55.0
E	> 35.0 and ≤ 50.0	> 55.0 and ≤ 80.0
F	> 50.0	> 80.0

As defined in the HCM 2000

Table 4 shows the analysis results by approach for the AM peak period. The analysis indicates all of the intersections operate at a LOS C or better. Table 5 shows the analysis results by approach for the PM peak period. The analysis indicates all of the intersections operate at a LOS C or better. Table 6 shows the analysis results by approach for the SAT peak period. The analysis again indicates all of the intersections operate at a LOS C or better. While the AM and PM peak determine the internal residential critical geometry, the Saturday peak period determines the critical geometry for the commercial areas.

Appendix B shows the analysis using Synchro.

Note that the intersection designations have changed from the previous study as intersections were eliminated and therefore the labeling was reconsolidated.

Table 4: AM Peak Period

INTERSECTION (Delay/ LOS)	CONTROL	EB	WB	NB	SB	INT
A	Signalized	5.4/A	13.9/B	4.6/A	7.6/A	6.3/A
C	Signalized	12.4/B	14.2/B	5.6/A	9.9/A	9.3/A
D	Signalized	6.4/A	-	6.9/A	1.7/A	3.7/A
E	Signalized	6.1/A	12.3/B	5.9/A		7.7/A
G	Signalized	6.4/A	17.8/B	5.3/A	11.6/B	11.5/B
H	Unsignalized	7.6/A	0.1/A	-	16.1/C	9.7/A
J	Signalized	8.0/A	15.8/B	8.3/A	7.2/A	8.4/A
K	Signalized	-	11.7/B	6.8/A	13.1/B	11.0/B
L	Unignalized	14.3/B	0.0/A	-	10.1/B	7.4/A
M	Unsignalized					A

All Internal intersections within the residential zone can also be accommodated with roundabouts and maintain a LOS C or better.

Table 5: PM Peak Period

INTERSECTION (Delay/ LOS)	CONTROL	EB	WB	NB	SB	INT
A	Signalized	4.0/A	43.6/D	27.9/C	13.8/B	24.4/C
C	Signalized	17.2/B	35.2/D	16.4/B	26.9/C	21.5/C
D	Signalized	17.0/B	-	43.4/D	1.6/A	18.0/B
E	Signalized	6.2/A	12.4/B	6.3/A	-	7.9/A
G	Signalized	6.3/A	10.6/B	5.0/A	7.0/A	6.4/A
H	Unsignalized	8.5/A	0.0/A	-	12.6/B	3.8/A
J	Signalized	18.4/B	24.4/C	15.2/B	13.8/B	17.2/B
K	Signalized	-	11.9/B	5.7/A	7.7/A	7.6/A
L	Unignalized	8.6/A	0.0/A	-	12.9/B	5.0/A
M	Unsignalized					A

All Internal intersections within the residential zone can also be accommodated with roundabouts and maintain a LOS C or better.

Table 6: SAT Peak Period

INTERSECTION (Delay/ LOS)	CONTROL	EB	WB	NB	SB	INT
A	Signalized	35.5/D	67.8/E	22.8/C	28.2/C	34.2/C
C	Signalized	24.2/C	53.3/D	25.8/C	41.3/D	33.3/C
D	Signalized	20.8/C	-	55.9/E	12.7/B	26.9/C
E	Signalized	5.4/A	10.4/B	9.0/A	-	7.9/A
G	Signalized	5.8/A	11.1/B	5.3/A	8.4/A	7.2/A
H	Unsignalized	8.2/A	0.0/A	-	18.0/C	6.7/A
J	Signalized	8.8/A	8.5/A	18.3/B	14.7/B	13.7/B
K	Signalized	-	12.0/B	5.4/A	8.7/A	8.3/A
L	Unignalized	8.2/A	0.0/A	-	11.7/B	5.6/A
M	Unsignalized					A

All Internal intersections within the residential zone can also be accommodated with roundabouts and maintain a LOS C or better.

Figure 7 identifies the projected Average Annual Daily Traffic (AADT) by road segment at full build-out. Note that the estimated daily ADT was estimated by using the rates provided by the trip generation handbook.

Figure 8 shows the recommended intersection control for the principal connections throughout Traverse Mountain.

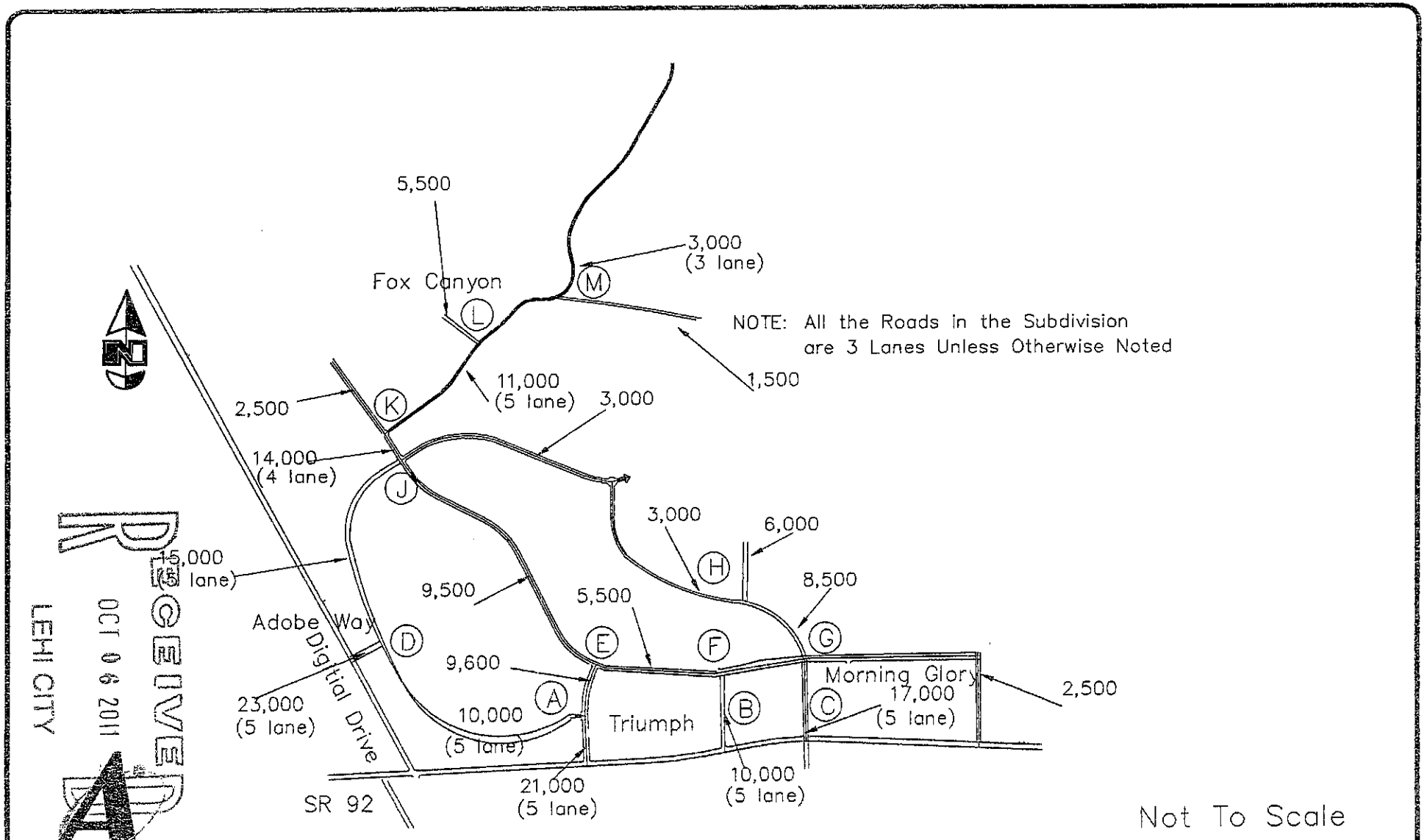

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Figure 7

Estimated Full Development AADT

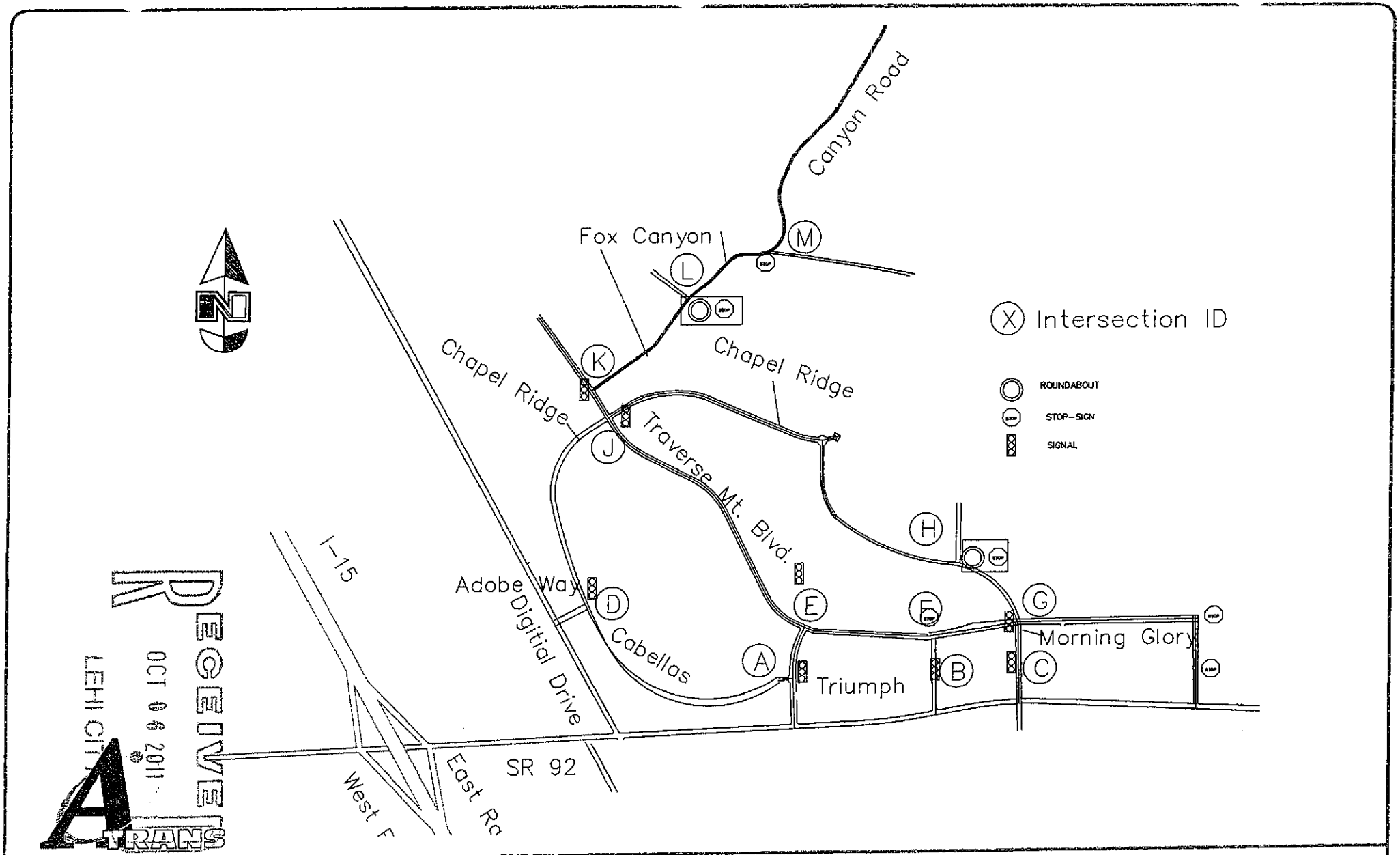

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Figure 8

Intersection Control

B. Access Analysis

Several accesses and local roads will be located throughout the development along the main roads. These will operate at two-way stop controlled intersections to provide access to the individual residential pods. The spacing recommendations are based on road type. Table 7 shows the recommended minimum spacing between private accesses and public roads based on typical access management guidelines. While these should be used as general guidelines, the mountainous conditions of the Traverse Mountain Development may require exceptions. A minimum 350 feet should be maintained from signalized intersections.

Table 7: Recommended Minimum Spacing Requirements

Road Type	Minor Access	Major Public Road
Arterial	250'	1,320'
Major Collector	150'	1,320'
Minor Collector	150'	660'

C. Queue Analysis

Based on the projected traffic, queue storage length requirements can be determined. The analysis is for the signalized intersections to determine the necessary storage space to accommodate the projected demand. The queue lengths are provided by the Synchro analysis. Once the storage length is determined, this can typically be compared to the available storage length within the provided turn pockets or between intersections. A minimum 50-foot storage at unsignalized intersections and 100 feet at signalized intersection is applied. Table 8 shows the minimum recommended queue storage lengths that should be provided based on the calculation and projected traffic demand.

Table 8: Queue Storage Length Requirements

	Left Lane			
Intersection	**EBL**	**WBL**	**NBL**	**SBL**
A	100'	500'	*350'	100'
C	150'	300'	*300'	150'
D	450'	-	*450'	-
E	-	100'	200'	-
G	100'	200'	200'	100'
H	100'		-	200'
J	500'	100'	150'	100'
K	100'	-	-	300'
L	200'	-	-	100'
M	-	100'	100'	-

A minimum of 100 feet is required even if volume does not calculate to need that much storage
Values represent required length based on projected demand.
* indicates dual left turn lanes of this length
At intersection A and C dual north and westbound lefts may be needed. ROW should be preserved but constructing dual turn lanes is not recommended at this time.

Key Geometric Needs

Based on this latest modeling, the following geometric needs are recommended to accomplish the operational level of service described in the analysis:

- Southbound from the West and Central to Fox Canyon, a free southbound right turn lane is needed with its own acceptance lane. Therefore, Fox Canyon should be a 3-lane facility above (northeast) the West/Central road and a 5-lane facility below (or southwest) of that intersection. The second downhill lane will be the free SE right turn lane from West/Central Canyon.
- While any of the internal residential intersections can be controlled by a roundabout, the most benefit in placing a roundabout instead of a traffic signal are at the following locations.
    - Morning Glory / East Canyon
    - Fox Canyon / West Canyon
- At Chapel Ridge/Cabelas and Adobe Way, make the outside SE lane a free right turn onto Adobe Way toward the Digital Drive.
- Saturday traffic determines the necessary geometry for the mid-block Commercial intersections on Triumph and Morning Glory. ROW should be preserved for the possible need for dual northbound left turn lanes at Triumph and Cabelas and at the mid-block commercial intersection on Morning Glory.
- Increase the length of the NBL at Cabelas and Adobe Way. There is a projected 250 feet of queue space needed and only 150 feet is currently available. This will require modifying the landscaped center raised median on Cabelas.
- While the existing geometry for Traverse Mountain Blvd is utilized in the analysis, it is recommended that attempts be made to provide a 4-lane section of Traverse Mountain Blvd from Fox Canyon to Chapel Ridge Road. This would allow dual southwest left turns at Fox Canyon / Traverse Mountain, and a southeast free right turn lane at Chapel Ridge / Traverse Mountain, which will also require an acceptance lane traveling southwest on Chapel Ridge. Chapel Ridge has 44 feet of asphalt and Traverse Mountain Blvd has 48 feet of asphalt so the additional lanes can be created by restriping. Road widening is unnecessary.

VII. Conclusions

The following summarizes the findings of the traffic analysis for Traverse Mountain in relation to the internal intersections and roadways based on the latest land uses from the August 2011 concept plan. At full development, Traverse Mountain will include 5,812 dwelling units and 3.7 million square feet of commercial/office space. There is an estimated 1,200 units currently occupied/under construction. The commercial and office are planned along the SR 92 corridor between SR 92 and Traverse Boulevard, which parallels SR 92, approximately 1,200 feet to the north. The purpose of the study was to size the internal roadways and intersections based on this latest land use layout.

In the initial development of Traverse Mountain, both the City and developer have requested that the roadways be minimized in order to provide a more residential appealing and pedestrian friendly environment. Therefore, while the site generates 96,000 trips a day with a projected 48,000 exiting onto the surrounding roadways, by providing multiple access points, the traffic flows at any particular point can be accommodated and allow most of the Traverse Mountain Development in the residential areas to primarily utilize 3-lane roadway facilities as requested. Recommended geometry is shown in the study and while the road width should be constructed for the ultimate need, the traffic control will be phased in as signalized intersections are warranted. However, it is prudent to put the underground facilities in when the road is constructed. The projected AADT and road size for each segment throughout the development are also shown in the study. Based on the analysis, the following recommendations should be taken into consideration as the site is developed.

Internal Intersections

- Internal roads are sized for the development as a whole with roads and intersections operating at a LOS C or better.
- The internal roads must conform to Lehi City standards and revert to AASHTO and MUTCD where Lehi design standards are not specified.
- Accesses located within 350 feet of the signalized intersections should be limited to right-in / right-out operations.
- For residential locations, a minimum of two accesses should be provided for each pod greater than 50 units. If any reconfiguration occurs that places more than 300 single family homes or 600 townhouse units in a pod, then a third local access is prudent.
- Many internal intersections will require future traffic signals as warranted. It is estimated that up to 5 intersections in the residential development will require traffic signals. These locations can utilize roundabouts in lieu of the traffic signals. The intersections where roundabouts could be used include:
  - Morning Glory / East Canyon
  - Fox Canyon / West Canyon

- In addition, mid-block signal will likely be necessary for ingress and egress to the commercial and office developments from the connector roads between SR 92 and Traverse Mountain Blvd, similar to the Cabelas Blvd signal on Triumph. Depending on where the density is assigned, dual northbound and westbound left turn lanes may become necessary.

Assumptions of the following are considered in this analysis:

1. No connection of Flight Park Road
2. No extension of the Traverse Mountain Blvd to Digital Drive
3. No new Northern interchange on I-15

The reduction of 27% of the residential units has reduced the demand within the internal roadways of Traverse Mountain. While this has resulted in relieving the internal infrastructure, the construction of the Quick Lanes on SR 92 will reduce the demand and congestions issues associated with the SR 92 intersections. Therefore, the traffic situation is a much different situation from the last 2008 analysis.

Table 9: Roadway Sizing

Roadway	Roadway	Section	# lanes	Projected AADT	ADT for LOS C	LOS C	Projected LOS
					Cap	v/c	
Arterial	Triumph	SR 92 to Traverse	5	21,000	26500	79%	C
Arterial	Road B	SR 92 to Traverse	5	10,000	26500	38%	B
Arterial	Morning Glory	SR 92 to Traverse	5	17,000	26500	64%	B
Collector	Road D	SR 92 to Traverse	3	2,500	10000	25%	A
Collector	Traverse	Road D to Triumph	3	5,500	10000	55%	B
Arterial	Traverse	Triumph to Chapel	3	9,500	10000	95%	C
Collector	Fox Canyon	Above West/Central Canyon Road	3	5,000	10000	50%	B
Collector	Fox Canyon	Below West/Central Canyon Road	5	11,000	19000	58%	B
Collector	Homestead/ Greyhawk	Above Traverse Mountain	2	2,500	9000	27%	A
Collector	Chapel Ridge	East of Traverse Mountain	3	3,000	10000	30%	B
Arterial	Cabelas	Between Triumph and Adobe	5	10,000	26500	38%	B
Arterial	Adobe	Southwest of Cabelas	5	23,000	26500	87%	C

The future residential traffic is likely to use Adobe and Morning Glory based on the proposed layout infrastructure layout. The commercial traffic will be distributed between the 4 entrances of Adobe, Triumph, Morning Glory and Road B (a SR 92 intersection located between Triumph and Morning Glory). All intersections and roadways are projected to operate at a LOS C or better at full-build conditions.

As modeled in this traffic study, all intersections and roadways within the Traverse Mountain at buildout operate at a LOS C or better and therefore the extension of Traverse Mountain Boulevard to Digital Drive as well as the construction of Flight Park Road is not required.

APPENDICES

Appendix A	Traffic Counts and Projections
Appendix B	Intersection Analyzes

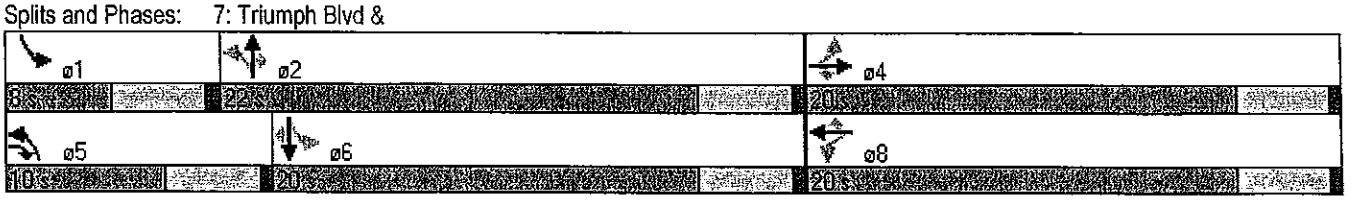
Appendix A Traffic Counts and Projections

Appendix B Intersection Analyzes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	30	180	60	30	20	288	251	110	31	263	31
Turn Type	Perm		pm+ov	Perm		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	5	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	10.0	20.0	20.0	20.0	10.0	22.0	22.0	8.0	20.0	20.0
Total Split (%)	40.0%	40.0%	20.0%	40.0%	40.0%	40.0%	20.0%	44.0%	44.0%	16.0%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	7.3	7.3	12.9	7.4	7.4	7.4	27.3	28.1	28.1	21.5	17.4	17.4
Actuated g/C Ratio	0.19	0.19	0.34	0.19	0.19	0.19	0.71	0.73	0.73	0.56	0.45	0.45
v/c Ratio	0.07	0.09	0.30	0.21	0.09	0.07	0.41	0.11	0.10	0.05	0.17	0.05
Control Delay	14.3	14.4	2.9	15.7	14.4	7.8	5.5	4.7	2.2	4.0	8.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	14.4	2.9	15.7	14.4	7.8	5.5	4.7	2.2	4.0	8.4	4.4
LOS	B	B	A	B	B	A	A	A	A	A	A	A
Approach Delay		5.4			13.9			4.6			7.6	
Approach LOS		A			B			A			A	

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 38.5	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.41	
Intersection Signal Delay: 6.3	Intersection LOS: A
Intersection Capacity Utilization 43.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: Triumph Blvd &

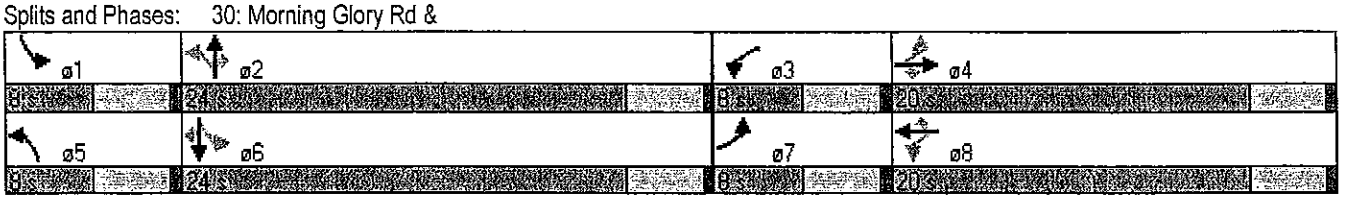


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	30	60	70	30	19	110	190	120	20	823	20
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	24.0	24.0	8.0	24.0	24.0
Total Split (%)	13.3%	33.3%	33.3%	13.3%	33.3%	33.3%	13.3%	40.0%	40.0%	13.3%	40.0%	40.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.9	7.0	7.0	9.2	9.6	9.6	25.9	27.9	27.9	24.6	25.3	25.3
Actuated g/C Ratio	0.20	0.17	0.17	0.23	0.24	0.24	0.65	0.70	0.70	0.61	0.63	0.63
v/c Ratio	0.07	0.10	0.20	0.22	0.07	0.05	0.28	0.09	0.12	0.03	0.39	0.02
Control Delay	13.4	19.8	8.3	14.6	16.4	9.3	7.1	6.6	2.7	5.7	10.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	19.8	8.3	14.6	16.4	9.3	7.1	6.6	2.7	5.7	10.2	5.2
LOS	B	B	A	B	B	A	A	A	A	A	B	A
Approach Delay		12.4			14.2			5.6			9.9	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 40.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 49.4% ICU Level of Service A
Analysis Period (min) 15

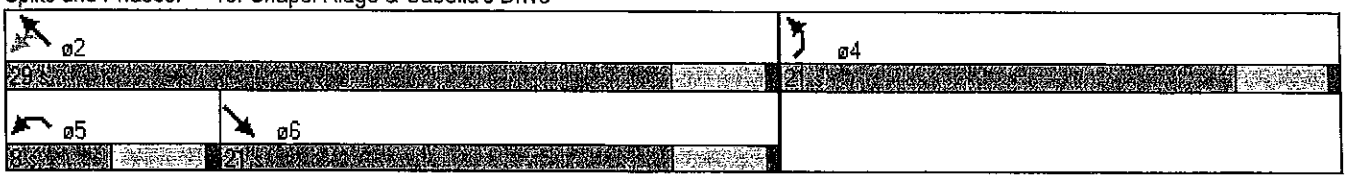
Splits and Phases: 30: Morning Glory Rd &



Lane Group	SET	SER	NWL	NWT	NEL
Lane Configurations					
Volume (vph)	20	814	112	20	287
Turn Type		Free	pm+pt		
Protected Phases	6		5	2	4
Permitted Phases		Free	2		
Detector Phase	6		5	2	4
Switch Phase					
Minimum Initial (s)	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0		8.0	20.0	20.0
Total Split (s)	21.0	0.0	8.0	29.0	21.0
Total Split (%)	42.0%	0.0%	16.0%	58.0%	42.0%
Yellow Time (s)	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	Min		None	Min	None
Act Effct Green (s)	6.3	27.3	10.4	10.4	8.5
Actuated g/C Ratio	0.23	1.00	0.38	0.38	0.31
v/c Ratio	0.05	0.56	0.26	0.02	0.43
Control Delay	11.2	1.4	7.2	5.3	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	1.4	7.2	5.3	6.4
LOS	B	A	A	A	A
Approach Delay	1.7			6.9	6.4
Approach LOS	A			A	A

Intersection Summary			
Cycle Length: 50			
Actuated Cycle Length: 27.3			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 3.7		Intersection LOS: A	
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15: Chapel Ridge & Cabella's Drive

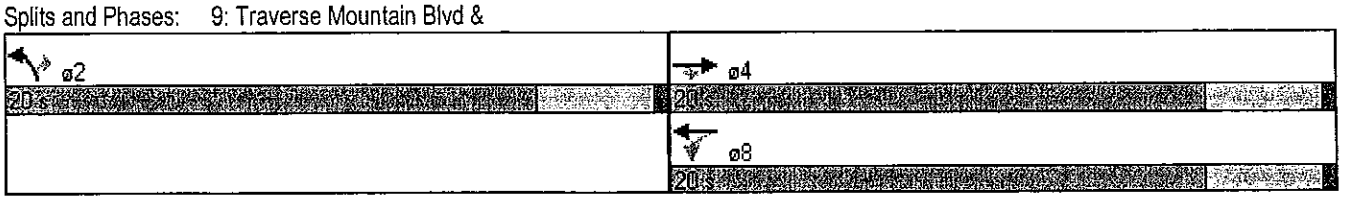


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	130	325	90	210	269	120
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	None	Max	Max
Act Effct Green (s)	9.5	9.5	9.5	9.5	17.0	17.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.49	0.49
v/c Ratio	0.28	0.51	0.29	0.45	0.33	0.15
Control Delay	10.5	4.4	11.4	12.7	7.6	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	4.4	11.4	12.7	7.6	2.3
LOS	B	A	B	B	A	A
Approach Delay	6.1			12.3	5.9	
Approach LOS	A			B	A	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 34.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 7.7 Intersection LOS: A
Intersection Capacity Utilization 36.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: Traverse Mountain Blvd &

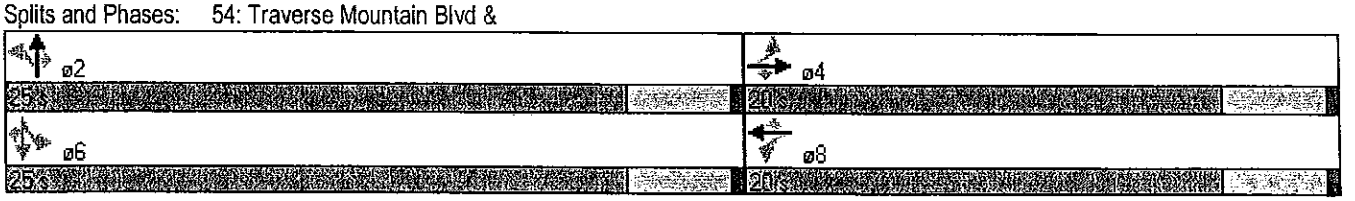


Timings
54: Traverse Mountain Blvd & Int G 9/23/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	30	83	268	30	30	20	133	79	30	512	30
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	custom		custom
Protected Phases		4			8			2				
Permitted Phases	4		4	8		8	2		2	6	6	6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%	55.6%	55.6%	55.6%	55.6%	55.6%	55.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	12.6	12.6	12.6	12.6	12.6	12.6	18.9	18.9	18.9	18.9	18.9	18.9
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.48	0.48	0.48	0.48	0.48	0.48
v/c Ratio	0.08	0.06	0.16	0.67	0.06	0.06	0.08	0.09	0.11	0.06	0.63	0.04
Control Delay	10.0	9.6	3.9	20.2	9.6	4.8	7.5	6.6	2.5	6.9	12.4	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	9.6	3.9	20.2	9.6	4.8	7.5	6.6	2.5	6.9	12.4	3.2
LOS	A	A	A	C	A	A	A	A	A	A	B	A
Approach Delay		6.4			17.8			5.3			11.6	
Approach LOS		A			B			A			B	

Intersection Summary	
Cycle Length: 45	
Actuated Cycle Length: 39.6	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 11.5	Intersection LOS: B
Intersection Capacity Utilization 56.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 54: Traverse Mountain Blvd &



HCM Unsignalized Intersection Capacity Analysis

2: Int Int #1 9/23/2011

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	30	132	44	89	380	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	143	48	97	413	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			907			
pX, platoon unblocked						
vC, conflicting volume	145				257	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	145				257	48
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				42	97
cM capacity (veh/h)	1438				716	1021

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	33	143	48	97	446
Volume Left	33	0	0	0	413
Volume Right	0	0	0	97	33
cSH	1438	1700	1700	1700	772
Volume to Capacity	0.02	0.08	0.03	0.06	0.58
Queue Length 95th (ft)	2	0	0	0	94
Control Delay (s)	7.6	0.0	0.0	0.0	16.1
Lane LOS	A				C
Approach Delay (s)	1.4		0.0		16.1
Approach LOS					C

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

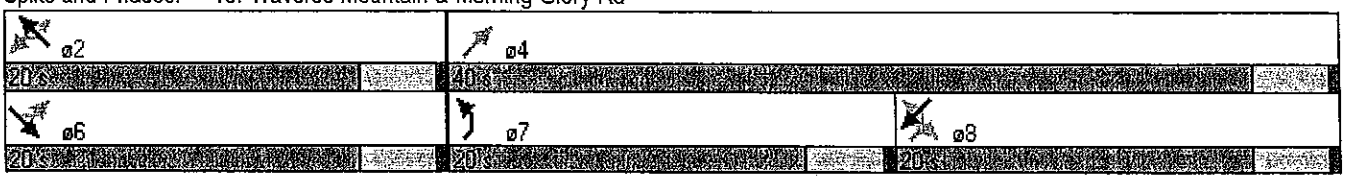
Timings
19: Traverse Mountain & Morning Glory Rd Int J 9/23/2011

Lane Group	SEL	SET	NWL	NWT	NWR	NEL	NET	SWL	SWT
Lane Configurations									
Volume (vph)	20	50	20	20	50	196	32	22	95
Turn Type	Perm		Perm		Perm	D.P+P		Perm	
Protected Phases		6		2		7			8
Permitted Phases	6		2		2	8	4	8	
Detector Phase	6	6	2	2	2	7	4	8	8
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	40.0	20.0	20.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%	66.7%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)	17.8	17.8	17.8	17.8	17.8	13.6	15.2	8.1	8.1
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.47	0.36	0.40	0.21	0.21
v/c Ratio	0.03	0.71	0.10	0.03	0.07	0.35	0.07	0.07	0.30
Control Delay	11.6	7.1	13.7	11.4	4.8	8.7	4.8	16.0	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	7.1	13.7	11.4	4.8	8.7	4.8	16.0	15.8
LOS	B	A	B	B	A	A	A	B	B
Approach Delay		7.2		8.3			8.0		15.8
Approach LOS		A		A			A		B

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 37.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 70.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 19: Traverse Mountain & Morning Glory Rd

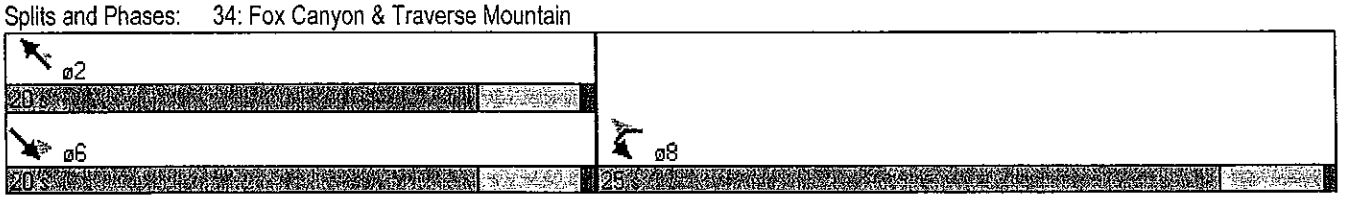


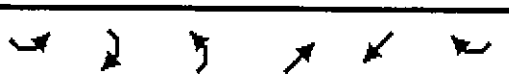
Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Volume (vph)	570	20	20	161	64	132
Turn Type		Perm	Perm			Perm
Protected Phases	8			6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	6	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	25.0	25.0	20.0	20.0	20.0	20.0
Total Split (%)	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	Min	Min
Act Effct Green (s)	16.0	16.0	8.7	8.7	8.7	8.7
Actuated g/C Ratio	0.48	0.48	0.26	0.26	0.26	0.26
v/c Ratio	0.71	0.03	0.06	0.36	0.14	0.27
Control Delay	12.0	2.7	11.1	13.4	11.4	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	2.7	11.1	13.4	11.4	4.5
LOS	B	A	B	B	B	A
Approach Delay	11.7			13.1	6.8	
Approach LOS	B			B	A	

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 33.1
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Fox Canyon & Traverse Mountain





Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	20	322	75	57	248	20
Sign Control	Stop			Free	Free	
Grade	0%			5%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	350	82	62	270	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	464	270	291			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	464	270	291			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	52	94			
cM capacity (veh/h)	493	728	1267			

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	372	82	31	31	270	22
Volume Left	22	82	0	0	0	0
Volume Right	350	0	0	0	0	22
cSH	774	1267	1700	1700	1700	1700
Volume to Capacity	0.48	0.06	0.02	0.02	0.16	0.01
Queue Length 95th (ft)	66	5	0	0	0	0
Control Delay (s)	14.3	8.0	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	14.3	4.6			0.0	
Approach LOS	B					

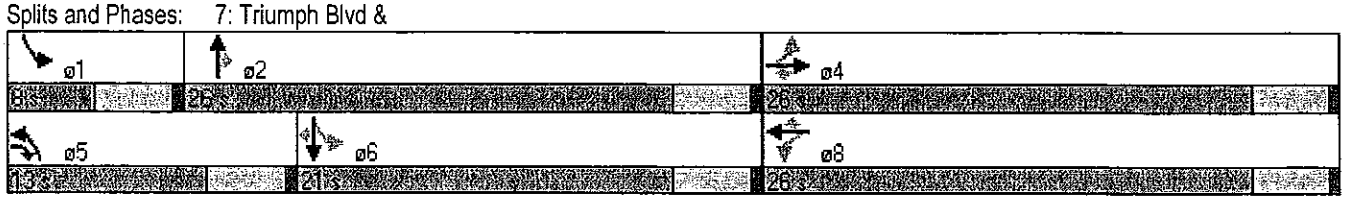
Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	30	428	430	30	49	440	209	397	51	191	48
Turn Type	Perm		pm+ov	Perm		Perm	Prot		Perm	pm+pt		Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	4	4	5	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	26.0	26.0	13.0	26.0	26.0	26.0	13.0	26.0	26.0	8.0	21.0	21.0
Total Split (%)	43.3%	43.3%	21.7%	43.3%	43.3%	43.3%	21.7%	43.3%	43.3%	13.3%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?			Yes				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	21.6	21.6	34.6	21.6	21.6	21.6	9.0	25.3	25.3	21.0	17.0	17.0
Actuated g/C Ratio	0.36	0.36	0.58	0.36	0.36	0.36	0.15	0.42	0.42	0.35	0.29	0.29
v/c Ratio	0.10	0.05	0.42	0.94	0.05	0.09	0.94	0.16	0.48	0.12	0.20	0.10
Control Delay	13.3	12.6	2.4	50.2	12.6	4.8	57.1	12.2	3.7	9.2	16.9	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	12.6	2.4	50.2	12.6	4.8	57.1	12.2	3.7	9.2	16.9	6.2
LOS	B	B	A	D	B	A	E	B	A	A	B	A
Approach Delay		4.0			43.6			27.9			13.8	
Approach LOS		A			D			C			B	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 59.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 24.4 Intersection LOS: C
Intersection Capacity Utilization 65.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 7: Triumph Blvd &



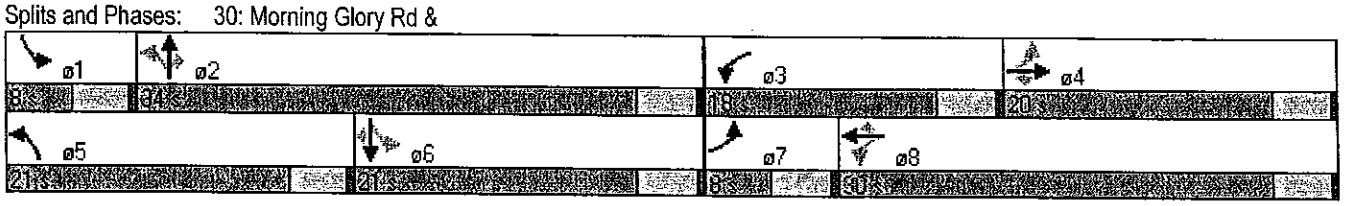
 Int C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	30	430	454	30	51	397	731	420	47	384	51
Turn Type	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	20.0	18.0	30.0	30.0	21.0	34.0	34.0	8.0	21.0	21.0
Total Split (%)	10.0%	25.0%	25.0%	22.5%	37.5%	37.5%	26.3%	42.5%	42.5%	10.0%	26.3%	26.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.4	9.3	9.3	27.5	23.0	23.0	33.8	29.3	29.3	17.0	13.0	13.0
Actuated g/C Ratio	0.19	0.13	0.13	0.40	0.33	0.33	0.49	0.42	0.42	0.24	0.19	0.19
v/c Ratio	0.18	0.13	0.81	0.89	0.05	0.10	0.79	0.55	0.50	0.22	0.62	0.16
Control Delay	16.5	27.8	16.6	39.5	18.7	6.4	26.2	18.3	4.0	14.9	30.8	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	27.8	16.6	39.5	18.7	6.4	26.2	18.3	4.0	14.9	30.8	9.2
LOS	B	C	B	D	B	A	C	B	A	B	C	A
Approach Delay		17.2			35.2			16.4			26.9	
Approach LOS		B			D			B			C	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 69.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 74.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 30: Morning Glory Rd &

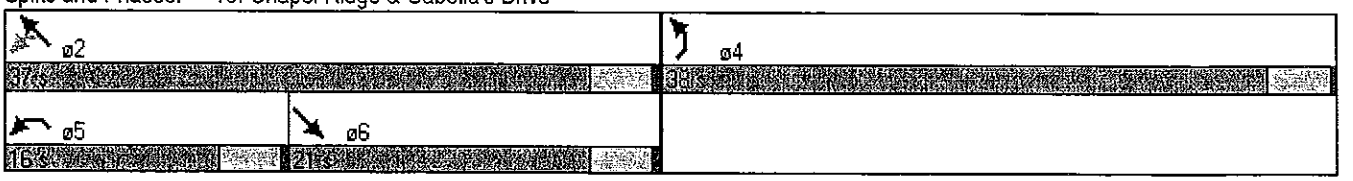


Lane Group	SET	SER	NWL	NWT	NEL
Lane Configurations					
Volume (vph)	20	543	400	20	945
Turn Type		Free	pm+pt		
Protected Phases	6		5	2	4
Permitted Phases		Free	2		
Detector Phase	6		5	2	4
Switch Phase					
Minimum Initial (s)	4.0		4.0	4.0	4.0
Minimum Split (s)	20.0		8.0	20.0	20.0
Total Split (s)	21.0	0.0	16.0	37.0	38.0
Total Split (%)	28.0%	0.0%	21.3%	49.3%	50.7%
Yellow Time (s)	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	Min		None	Min	None
Act Effct Green (s)	6.3	62.6	22.4	22.4	32.2
Actuated g/C Ratio	0.10	1.00	0.36	0.36	0.51
v/c Ratio	0.12	0.37	0.90	0.02	0.83
Control Delay	27.8	0.7	44.9	13.8	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	0.7	44.9	13.8	17.0
LOS	C	A	D	B	B
Approach Delay	1.6			43.4	17.0
Approach LOS	A			D	B

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 62.6
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 75.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 15: Chapel Ridge & Cabella's Drive

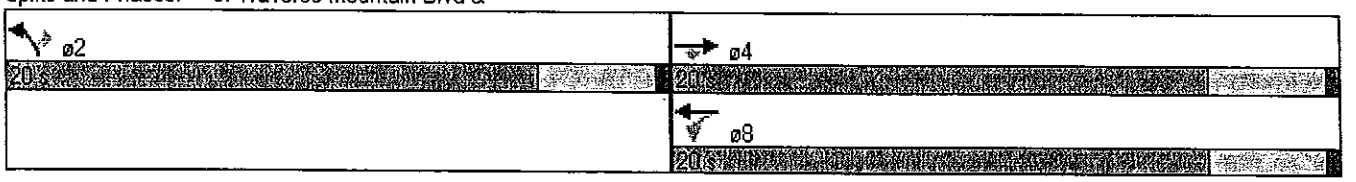


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	130	290	90	210	305	120
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	None	Max	Max
Act Effct Green (s)	9.5	9.5	9.5	9.5	17.4	17.4
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.50	0.50
v/c Ratio	0.28	0.48	0.29	0.45	0.38	0.15
Control Delay	10.5	4.2	11.5	12.8	7.9	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	4.2	11.5	12.8	7.9	2.3
LOS	B	A	B	B	A	A
Approach Delay	6.2			12.4	6.3	
Approach LOS	A			B	A	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 35
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 7.9 Intersection LOS: A
Intersection Capacity Utilization 38.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: Traverse Mountain Blvd &



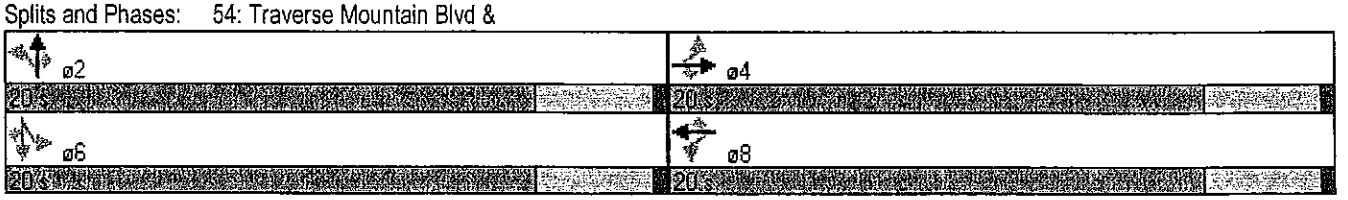
Timings
54: Traverse Mountain Blvd & Int G 9/23/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	30	39	163	30	30	79	464	288	30	280	30
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	custom		custom
Protected Phases		4			8			2				
Permitted Phases	4		4	8		8	2		2	6	6	6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	9.3	9.3	9.3	9.3	9.3	9.3	17.1	17.1	17.1	17.1	17.1	17.1
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.30	0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.08	0.06	0.08	0.43	0.06	0.07	0.15	0.26	0.31	0.07	0.30	0.04
Control Delay	8.0	7.7	3.8	12.4	7.7	4.0	7.2	6.3	2.2	6.8	7.4	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	7.7	3.8	12.4	7.7	4.0	7.2	6.3	2.2	6.8	7.4	3.2
LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Delay		6.3			10.6			5.0			7.0	
Approach LOS		A			B			A			A	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 31.2
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 6.4 Intersection LOS: A
Intersection Capacity Utilization 44.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 54: Traverse Mountain Blvd &



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	30	85	146	318	195	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	92	159	346	212	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			907			
pX, platoon unblocked						
vC, conflicting volume	504				316	159
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	504				316	159
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				68	96
cM capacity (veh/h)	1060				656	887

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	33	92	159	346	245
Volume Left	33	0	0	0	212
Volume Right	0	0	0	346	33
cSH	1060	1700	1700	1700	757
Volume to Capacity	0.03	0.05	0.09	0.20	0.32
Queue Length 95th (ft)	2	0	0	0	35
Control Delay (s)	8.5	0.0	0.0	0.0	12.6
Lane LOS	A				B
Approach Delay (s)	2.2		0.0		12.6
Approach LOS					B

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	SEL	SET	NWL	NWT	NWR	NEL	NET	SWL	SWT
Lane Configurations									
Volume (vph)	20	50	20	20	50	822	112	22	61
Turn Type	Perm		Perm		Perm	D.P+P		Perm	
Protected Phases		6		2		7			8
Permitted Phases	6		2		2	8	4	8	
Detector Phase	6	6	2	2	2	7	4	8	8
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	35.0	55.0	20.0	20.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	46.7%	73.3%	26.7%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)	9.7	9.7	9.7	9.7	9.7	34.5	37.4	8.0	8.0
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.62	0.67	0.14	0.14
v/c Ratio	0.09	0.78	0.16	0.07	0.17	0.88	0.11	0.13	0.31
Control Delay	22.4	13.5	24.9	21.8	8.5	20.7	3.6	26.8	23.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	13.5	24.9	21.8	8.5	20.7	3.6	26.8	23.7
LOS	C	B	C	C	A	C	A	C	C
Approach Delay		13.8		15.2			18.4		24.4
Approach LOS		B		B			B		C

Intersection Summary

Cycle Length: 75

Actuated Cycle Length: 55.7

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

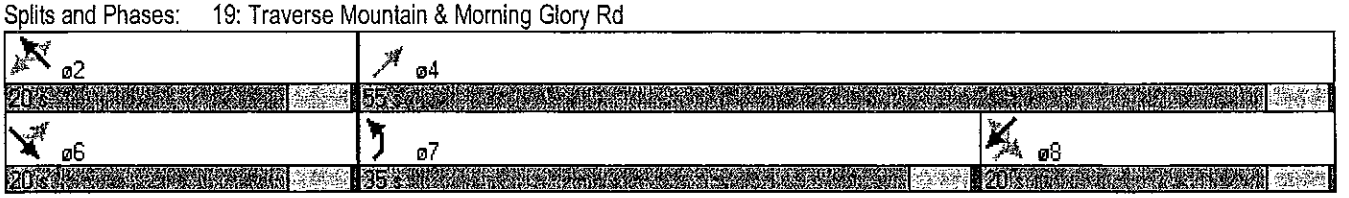
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 17.2 Intersection LOS: B

Intersection Capacity Utilization 87.9% ICU Level of Service E

Analysis Period (min): 15

Splits and Phases: 19: Traverse Mountain & Morning Glory Rd



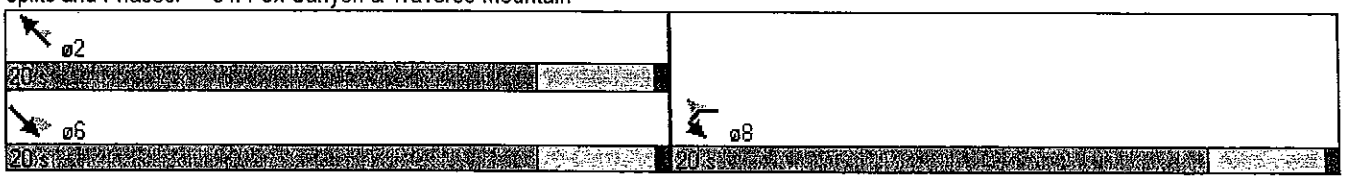
Timings
34: Fox Canyon & Traverse Mountain Int K 9/23/2011

Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Volume (vph)	348	20	20	80	160	662
Turn Type		Perm	Perm			Perm
Protected Phases	8			6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	6	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	Min	Min
Act Effct Green (s)	11.3	11.3	12.0	12.0	12.0	12.0
Actuated g/C Ratio	0.36	0.36	0.38	0.38	0.38	0.38
v/c Ratio	0.58	0.04	0.05	0.12	0.25	0.69
Control Delay	12.4	4.0	7.5	7.7	8.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	4.0	7.5	7.7	8.6	5.0
LOS	B	A	A	A	A	A
Approach Delay	11.9			7.7	5.7	
Approach LOS	B			A	A	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 31.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 7.6 Intersection LOS: A
Intersection Capacity Utilization 51.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Fox Canyon & Traverse Mountain



Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	20	170	323	339	178	20
Sign Control	Stop			Free	Free	
Grade	0%			5%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	185	351	368	193	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1080	193	215			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1080	193	215			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	77	74			
cM capacity (veh/h)	158	815	1352			

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	207	351	184	184	193	22
Volume Left	22	351	0	0	0	0
Volume Right	185	0	0	0	0	22
cSH	911	1352	1700	1700	1700	1700
Volume to Capacity	0.23	0.26	0.11	0.11	0.11	0.01
Queue Length 95th (ft)	22	26	0	0	0	0
Control Delay (s)	12.9	8.6	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	12.9	4.2			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

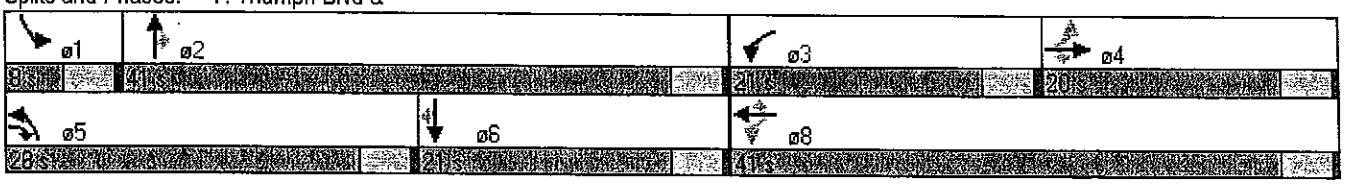
Timings
7: Triumph Blvd & Int A 9/23/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	30	647	482	30	53	767	253	522	58	247	85
Turn Type	Perm		pm+ov	pm+pt		Perm	Prot		Perm	Prot		Perm
Protected Phases		4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	20.0	20.0	28.0	21.0	41.0	41.0	28.0	41.0	41.0	8.0	21.0	21.0
Total Split (%)	22.2%	22.2%	31.1%	23.3%	45.6%	45.6%	31.1%	45.6%	45.6%	8.9%	23.3%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	10.0	10.0	35.9	28.8	28.8	28.8	24.2	39.1	39.1	4.0	17.1	17.1
Actuated g/C Ratio	0.12	0.12	0.44	0.35	0.35	0.35	0.29	0.48	0.48	0.05	0.21	0.21
v/c Ratio	0.47	0.15	0.91	1.04	0.05	0.10	0.85	0.17	0.55	0.37	0.35	0.22
Control Delay	43.7	34.0	34.7	78.0	16.9	5.3	38.4	14.6	3.8	46.2	30.7	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	34.0	34.7	78.0	16.9	5.3	38.4	14.6	3.8	46.2	30.7	8.6
LOS	D	C	C	E	B	A	D	B	A	D	C	A
Approach Delay		35.5			67.8			22.8			28.2	
Approach LOS		D			E			C			C	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 82.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 34.2 Intersection LOS: C
Intersection Capacity Utilization 83.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Triumph Blvd &

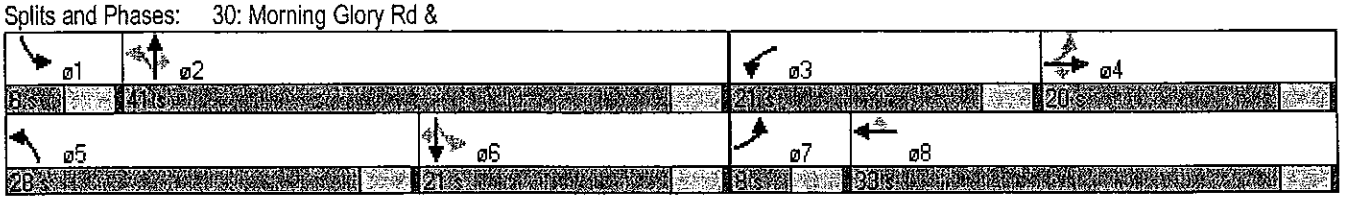


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	30	482	596	30	42	522	560	654	38	534	41
Turn Type	pm+pt		Perm	Prot		Perm	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0	8.0	20.0	20.0
Total Split (s)	8.0	20.0	20.0	21.0	33.0	33.0	28.0	41.0	41.0	8.0	21.0	21.0
Total Split (%)	8.9%	22.2%	22.2%	23.3%	36.7%	36.7%	31.1%	45.6%	45.6%	8.9%	23.3%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	15.5	11.4	11.4	17.1	27.9	27.9	44.4	39.8	39.8	20.3	16.3	16.3
Actuated g/C Ratio	0.18	0.13	0.13	0.20	0.33	0.33	0.52	0.47	0.47	0.24	0.19	0.19
v/c Ratio	0.22	0.13	0.88	0.94	0.05	0.08	1.00	0.38	0.65	0.17	0.83	0.13
Control Delay	20.3	32.9	24.1	58.2	21.4	7.3	62.0	16.9	4.7	16.2	45.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	32.9	24.1	58.2	21.4	7.3	62.0	16.9	4.7	16.2	45.5	10.7
LOS	C	C	C	E	C	A	E	B	A	B	D	B
Approach Delay		24.2			53.3			25.8			41.3	
Approach LOS		C			D			C			D	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 85
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 33.3 Intersection LOS: C
Intersection Capacity Utilization 77.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 30: Morning Glory Rd &

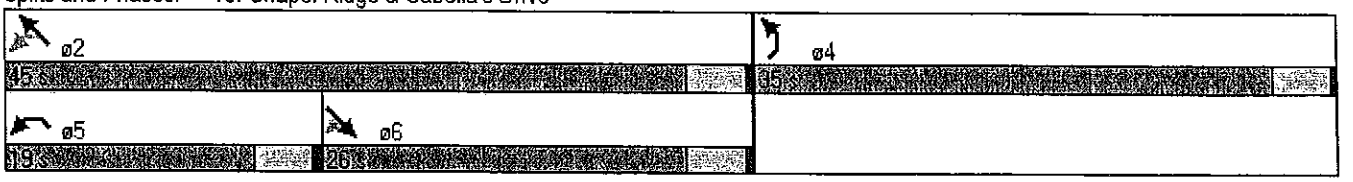


Lane Group	SET	SER	NWL	NWT	NEL
Lane Configurations					
Volume (vph)	30	613	560	30	677
Turn Type		Perm	pm+pt		
Protected Phases	6		5	2	4
Permitted Phases		6	2		
Detector Phase	6	6	5	2	4
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	8.0	20.0	20.0
Total Split (s)	26.0	26.0	19.0	45.0	35.0
Total Split (%)	32.5%	32.5%	23.8%	56.3%	43.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes		
Recall Mode	Min	Min	None	Min	None
Act Effct Green (s)	10.3	10.3	29.5	29.5	30.1
Actuated g/C Ratio	0.15	0.15	0.44	0.44	0.44
v/c Ratio	0.12	0.83	1.00	0.02	0.86
Control Delay	24.5	12.1	58.4	10.6	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	12.1	58.4	10.6	20.8
LOS	C	B	E	B	C
Approach Delay	12.7			55.9	20.8
Approach LOS	B			E	C

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 67.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 83.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 15: Chapel Ridge & Cabella's Drive

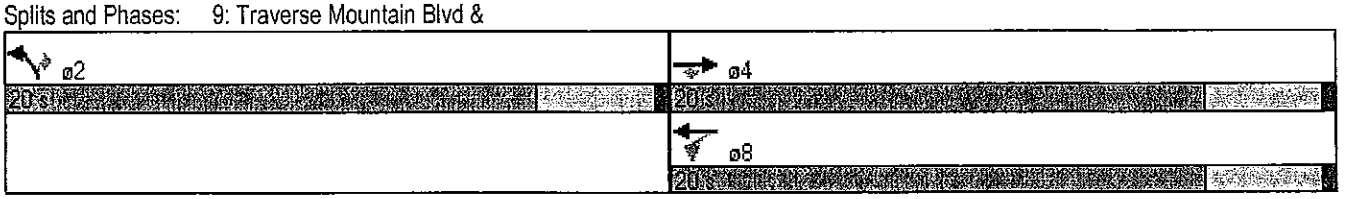


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	130	390	90	210	378	120
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	None	Min	Min
Act Effct Green (s)	9.3	9.3	9.3	9.3	12.1	12.1
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.41	0.41
v/c Ratio	0.24	0.54	0.25	0.39	0.57	0.18
Control Delay	9.2	4.2	9.9	10.6	11.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	4.2	9.9	10.6	11.0	2.6
LOS	A	A	A	B	B	A
Approach Delay	5.4			10.4	9.0	
Approach LOS	A			B	A	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 29.7
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 7.9 Intersection LOS: A
Intersection Capacity Utilization 42.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 9: Traverse Mountain Blvd &

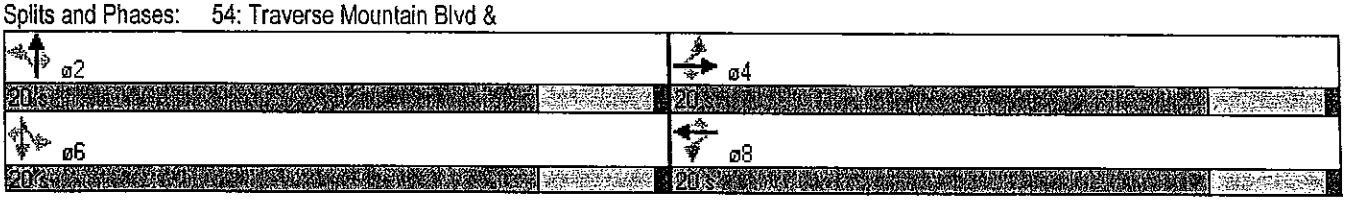


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	30	53	192	30	30	53	376	226	30	368	30
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	custom		custom
Protected Phases		4			8			2				
Permitted Phases	4		4	8		8	2		2	6	6	6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	10.0	10.0	10.0	10.2	10.2	10.2	17.1	17.1	17.1	17.1	17.1	17.1
Actuated g/C Ratio	0.31	0.31	0.31	0.32	0.32	0.32	0.54	0.54	0.54	0.54	0.54	0.54
v/c Ratio	0.08	0.06	0.11	0.48	0.06	0.06	0.12	0.22	0.26	0.06	0.40	0.04
Control Delay	7.9	7.6	3.5	12.8	7.6	3.9	7.6	6.7	2.3	7.2	8.9	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	7.6	3.5	12.8	7.6	3.9	7.6	6.7	2.3	7.2	8.9	3.5
LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Delay		5.8			11.1			5.3			8.4	
Approach LOS		A			B			A			A	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 31.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 7.2 Intersection LOS: A
Intersection Capacity Utilization 50.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 54: Traverse Mountain Blvd &



Int H

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	30	111	111	265	257	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	121	121	288	279	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						6
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			907			
pX, platoon unblocked						
vC, conflicting volume	409				307	121
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	409				307	121
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				58	96
cM capacity (veh/h)	1150				666	931

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	33	121	121	288	312
Volume Left	33	0	0	0	279
Volume Right	0	0	0	288	33
cSH	1150	1700	1700	1700	744
Volume to Capacity	0.03	0.07	0.07	0.17	0.42
Queue Length 95th (ft)	2	0	0	0	52
Control Delay (s)	8.2	0.0	0.0	0.0	13.7
Lane LOS	A				B
Approach Delay (s)	1.7		0.0		13.7
Approach LOS					B

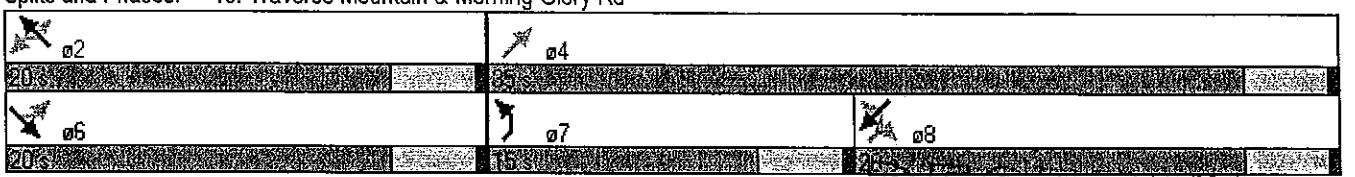
Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	SEL	SET	NWL	NWT	NWR	NEL	NET	SWL	SWT
Lane Configurations									
Volume (vph)	20	50	20	20	50	582	85	30	83
Turn Type	Perm		Perm		Perm	D.P+P		Perm	
Protected Phases		6		2		7			8
Permitted Phases	6		2		2	8	4	8	
Detector Phase	6	6	2	2	2	7	4	8	8
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	8.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	15.0	35.0	20.0	20.0
Total Split (%)	36.4%	36.4%	36.4%	36.4%	36.4%	27.3%	63.6%	36.4%	36.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						Lead		Lag	Lag
Lead-Lag Optimize?						Yes		Yes	Yes
Recall Mode	Min	Min	Min	Min	Min	None	None	None	None
Act Effct Green (s)	9.3	9.3	9.3	9.3	9.3	16.3	18.3	7.8	7.8
Actuated g/C Ratio	0.26	0.26	0.26	0.26	0.26	0.45	0.50	0.21	0.21
v/c Ratio	0.06	0.74	0.11	0.05	0.12	0.82	0.12	0.09	0.27
Control Delay	12.2	8.7	13.2	11.9	5.2	20.6	5.0	15.5	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	8.7	13.2	11.9	5.2	20.6	5.0	15.5	14.5
LOS	B	A	B	B	A	C	A	B	B
Approach Delay		8.8		8.5			18.3		14.7
Approach LOS		A		A			B		B

Intersection Summary

Cycle Length: 55
Actuated Cycle Length: 36.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 80.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 19: Traverse Mountain & Morning Glory Rd

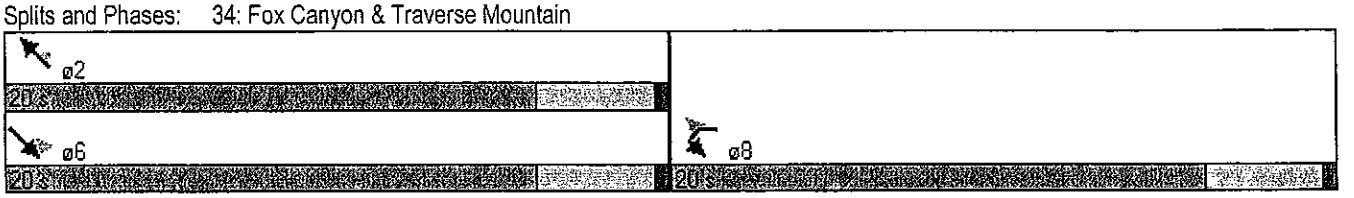


Lane Group	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Volume (vph)	434	20	20	88	95	487
Turn Type		Perm	Perm			Perm
Protected Phases	8			6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	6	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	Min	Min
Act Effct Green (s)	12.2	12.2	9.4	9.4	9.4	9.4
Actuated g/C Ratio	0.41	0.41	0.31	0.31	0.31	0.31
v/c Ratio	0.64	0.03	0.05	0.16	0.18	0.62
Control Delay	12.4	3.8	8.2	8.8	8.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	3.8	8.2	8.8	8.9	4.7
LOS	B	A	A	A	A	A
Approach Delay	12.0			8.7	5.4	
Approach LOS	B			A	A	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 29.9
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 8.3 Intersection LOS: A
Intersection Capacity Utilization 40.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 34: Fox Canyon & Traverse Mountain



Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	20	214	239	180	160	20
Sign Control	Stop			Free	Free	
Grade	0%			5%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	233	260	196	174	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	791	174	196			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	791	174	196			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	72	81			
cM capacity (veh/h)	265	839	1375			

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2
Volume Total	254	260	98	98	174	22
Volume Left	22	260	0	0	0	0
Volume Right	233	0	0	0	0	22
cSH	918	1375	1700	1700	1700	1700
Volume to Capacity	0.28	0.19	0.06	0.06	0.10	0.01
Queue Length 95th (ft)	28	17	0	0	0	0
Control Delay (s)	11.7	8.2	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	11.7	4.7			0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		